

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The final Office Action dated January 28, 2011 has been received and its contents carefully reviewed.

By this Response, claims 1 and 11 have been amended, and claims 5-6 and 13-14 have been cancelled without prejudice or disclaimer. No new matter is added. Accordingly, claims 1, 7-11 and 16-19 are currently pending. Reexamination and reconsideration of the pending claims are respectfully requested.

In the Office Action, claims 1, 5-11, 13, 14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito (U.S. Patent 6,462,735) in view of Kang (U.S. Pub. No. 2002/0063666), Mizukoshi (U.S. Patent No. 6,919,691), and Chen (U.S. Patent 6,972,772). This rejection is respectfully traversed, and reconsideration is requested.

Claim 1 is allowable over the cited references in that claim 1 recites a combination of elements including, for example, "...a gamma voltage generator having a single resistor string in which a plurality of resistors are serially connected, which receives all of the Red, Green and Blue M-bit digital data signals and generates a plurality of gamma voltages corresponding to the Red, Green and Blue M-bit digital data signals..." None of the cited references including Naito, Kang, Mizukoshi and Chen, singly or in combination, teaches or suggests at least this feature of the claimed invention.

As illustrated in Fig. 7 of the present application, the Red, Green and Blue N-bit digital data signals having a same number of gray scale values are converted to the Red, Green and Blue M-bit digital data signals through three look-up tables 142. Then, the gamma voltage generator 126 having a single resistor string (Fig. 8) in which a plurality of resistors are serially connected, receives all of the Red, Green and Blue M-bit digital data signals and generates a plurality of gamma voltages corresponding to the Red, Green and Blue M-bit digital data signals.

In the final Office Action at page 3, the Examiner cites Fig. 9 of Kang as allegedly teaching the claimed gamma voltage generator. As shown in Fig. 8 of Kang, all red, green

and blue digital video signals are modulated by the multi-mode gamma voltage generator 84. However, although Fig. 9 shows only one gamma voltage generator for simplicity, it would have three gamma voltage generators with three different resistor strings for the red, green and blue digital video signals, similar to Fig. 4 (Related Art) of the present application. This is because the input digital video signal D0 to D5 in Fig. 9 of Kang is a 6-bit input digital data of one of the red, green and blue video signals, which is capable of displaying 64 gray-scale levels (i.e., 2^6) for one of red, green and blue colors. As best understood, the word “multi-channel” in the context of the Kang reference is used to describe the gamma voltage generator having multiple sets of gamma reference voltages for each color. See Kim, for example, at Table 1. Thus, none of the cited references including Kang, singly or in combination, teaches or suggests “a gamma voltage generator having a single resistor string in which a plurality of resistors are serially connected, which receives all of the Red, Green and Blue M-bit digital data signals and generates a plurality of gamma voltages corresponding to the Red, Green and Blue M-bit digital data signals” as recited in claim 1.

In addition, in the claimed invention, the timing controller includes a R look-up table which receives Red N-bit digital data signals and converts the Red N-bit digital data signals into Red M-bit digital data signals, a G look-up table which receives Green N-bit digital data signals and converts the Green N-bit digital data signals into Green M-bit digital data signals, and a B look-up table which receives Blue N-bit digital data signals and converts the Blue N-bit digital data signals into Blue M-bit digital data signals. Also, the numbers of the gray scale values of the Red, Green, and Blue N-bit digital data signals are the same, and the number of gray scale values of the Red M-bit digital data signals is larger than that of the Green M-bit digital data signals, and the number of gray scale values of the Green M-bit digital data signals is larger than that of the Blue M-bit digital data signals.

On pages 2-3 of the Office Action, the Examiner cites Naito as teaching the aforementioned features of claim 1. In particular, the Examiner states that “the timing controller includes a look-up table (i.e., conversion table, see column 11, lines 16-23) which receives Red, Green, and Blue N-Bit (e.g., 8 bit) digital data signals having a same number of gray scale values (256). However, Naito is directed to the conversion table of gamma correction characteristics which can be stored in the storage unit. The conversion table has a structure in which a picture signal is input as address data. The data (DATA PUT)

corresponding to the picture signal input (DATA IN) is stored in the storage area of the address, and is read out in response to address input so as to convert it into a gamma-corrected digital picture signal. In other words, the conversion table of Naito fails to disclose the timing controller including R, G and B look-up tables and the relationship between numbers of gray scale values of the Red, Green and Blue M-bit digital data signals which are outputted from R, G and B look-up tables, respectively.

For at least the foregoing reasons, Applicants respectfully submit that claim 1 and claims 7-10, which depend from claim 1, are allowable over the cited references.

Claim 11 is allowable over the cited references in that claim 11 recites a combination of elements including, for example, “generating a plurality of gamma voltages corresponding to the Red, Green and Blue M-bit digital data signals by a gamma voltage generator having a single resistor string in which a plurality of resistors are serially connected, which receives all of the Red, Green and Blue M-bit digital data signals...” For similar reasons set forth with respect to claim 1, Applicants respectfully submit that claim 11 and claims 16-19, which depend from claim 11, are allowable over the cited references.

Applicants believe the application is in condition for allowance and early, favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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Respectfully submitted,

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